



REPLACEMENT ABSTRACT

The present invention is a A pin-fuse joint generally utilized in a beam-to-column joint assembly subject to extreme seismic loading is described. The pin-fuse joint resists bending moments and shears generated by these loads. The joint is comprised of standard structural steel building materials, but may be applied to structures comprised of structural steel, reinforced concrete, and or composite materials, *e.g.*, a combination of structural steel and reinforced concrete. The beam-to-column assembly is comprised of a column and a beam and a plate assembly that extends between the column and the beam. The plate assembly is welded to the column and is attached to the beam via the pin-fuse joint. The pin fuse joint is created by a pin connection through the beam and the connection plates of the plate assembly at the web of the beam. Additionally, both the plate assembly and the beam have curved flange end connectors that sit flush against one another separated only by a brass shim when the beam and plate assembly are joined. The curved flange end connectors of the beam and plate assembly are then secured against one another by torqued high-strength bolts.